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Abstract

THE EXPERIENCE OF THE PULSED FAST REACTOR OPERATION AND ITS CHARACTERISTICS AT INJECTION OF NEUTRONS FROM A MICROTRON

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In this report the experience of the three-year operation of the pulsed fast reactor is described. The main disadvantage of the PFR, as a pulsed source for neutron spectrometry, is a long duration of a burst. In this connection recently the work has been performed on the construction of the injector of fast neutrons multiplying in the PFR operating in subcritical mode. The use of the subcritical system for multiplying neutrons from a pulsed accelerator comes across some difficulties connected with delayed neutrons multiplication. In the pulsed reactor the multiplication coefficient reaches some large magnitude only for a very short period of time. As a result, multiplication takes place only for prompt neutrons, while the average magnitude of the multiplication coefficient for delayed ones is small. This permits to use the PFR for the neutron multiplication. A burst is initiated by photoneutrons from bremsstrahlung of fast electrons generated by a microtron. In this report some peculiarities of such a system in different conditions of operation are considered.

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